

WE CLAIM:

1. A two stage snowthrower, which comprises:
 - (a) an auger housing having a transversely extending auger for gathering snow lying on the ground;
 - (b) a cylindrical impeller housing behind the auger housing with the impeller housing having a circular cross-section, the impeller housing carrying a rotatable impeller for receiving snow from the auger and for throwing snow vertically upwardly in a snow stream;
 - (c) a snow discharge pipe on top of the impeller housing for receiving the snow stream from the impeller and for delivering the snow stream to a chute carried on top of the snow discharge pipe; and
 - (d) wherein the circular cross-section of the impeller housing is joined to a first side wall of the snow discharge pipe along a first edge such that the circular cross-section of the impeller is interrupted along a first edge, and wherein the circular cross-section of the impeller housing resumes at a second edge which second edge is separated by a gap from a lower edge of a second side wall of the snow discharge pipe.
2. The snowthrower of claim 1, wherein the second edge is displaced laterally from the lower edge of the second side wall of the snow discharge pipe.
3. The snowthrower of claim 1, wherein the second edge is displaced vertically below the lower edge of the second side wall of the snow discharge pipe.
4. The snowthrower of claim 1, wherein the second edge is displaced both laterally from and vertically below the

lower edge of the second side wall of the snow discharge pipe.

5. The snowthrower of claim 1, wherein at least the second side wall of the snow discharge pipe tapers outwardly as it extends downwardly to connect to the impeller housing.

6. The snowthrower of claim 5, wherein both the second side wall and a front wall of the snow discharge pipe taper outwardly as they extend downwardly to connect to the impeller housing.

7. The snowthrower of claim 1, wherein at least a front wall of the snow discharge pipe tapers outwardly as it extends downwardly to connect to the impeller housing.

8. The snowthrower of claim 1, further including a bypass member connecting the gap back to the auger housing, the bypass member having a bypass passage for allowing snow passing through the gap and not through the snow discharge pipe to be recirculated back to the auger housing to be picked up by the auger and impeller again.

9. The snowthrower of claim 8, wherein the snow discharge pipe and bypass member are formed as a single piece.

10. The snowthrower of claim 8, wherein the bypass member extends laterally from the second side wall of the snow discharge pipe.

11. The snowthrower of claim 10, wherein the bypass member further extends forwardly relative to the snow discharge pipe to connect to the auger housing.

12. The snowthrower of claim 11, further including a downwardly facing bypass passage formed in the laterally and forwardly extending bypass member for conducting snow from the gap back to a bypass exit in the auger housing.

13. The snowthrower of claim 12, further including a downwardly and inwardly curved ramp in the bypass exit in the auger housing with the ramp underlying at least a portion of the bypass member to help guide snow from the bypass passage back into the auger housing.

14. A two stage snowthrower, which comprises:

(a) an auger rotating within an auger housing having an open front, the auger shaped for feeding snow into an impeller housing;

(b) an impeller rotating within a circular cross-section of the impeller housing for throwing snow upwardly through a snow discharge pipe; and

(c) a gap between a lower edge of a second side wall of the snow discharge pipe and the circular cross-section of the impeller housing for allowing some snow to bypass the snow discharge pipe and not be thrown therethrough.

15. The snowthrower of claim 14, further including a bypass member for connecting the gap to the auger housing for recirculating snow not thrown through the snow discharge pipe back to the auger housing.

16. The snowthrower of claim 14, wherein the snowthrower is a walk behind snowthrower having an upwardly and rearwardly extending handle assembly.

17. A two stage snowthrower, which comprises:

(a) a transversely extending auger housed within an auger housing;

(b) a generally cylindrical impeller housing extending rearwardly from a rear wall of the auger housing;

(c) a rotatable impeller within the impeller housing, wherein the impeller rotates within a circular cross-section of the impeller housing to throw snow upwardly through a snow discharge pipe attached to a top of the impeller housing, wherein the snow discharge pipe has a first side wall and a second side wall;

(d) wherein the first side wall of the snow discharge pipe is joined to the circular cross-section of the impeller housing at a first edge where snow is thrown upwardly by blades of the impeller, the circular cross-section of the impeller housing resuming at a second edge which is displaced laterally and vertically below a lower edge of the second side wall of the snow discharge pipe.